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SOME PROBLEMS AND REQUISITES

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SYSTEMS ANALYSIS FOR DEVELOPMENT ADMINISTRATION:

SOME PROBLEMS AND REQUISITES

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ABSTRACT

SYSTEMS ANALYSIS IS ONE METHOD OF APPLYING STRUCTURED RATIONALITY AND KNOWLEDGE TO PROBLEMS. IT HAS A LIMITED DOMAIN OF USEFULNESS, CIRCUMSCRIBED IN TERMS OF CHARACTERISTICS OF PROBLEMS WITH WHICH SYSTEMS ANALYSIS CAN OR CANNOT USEFULLY DEAL. APPLICATION OF THE USEFULNESS DOMAIN OF SYSTEMS ANALYSIS TO DEVELOPMENT ADMINISTRATION PROBLEMS PERMITS IDENTIFICATION OF THOSE PROBLEM AREAS IN THE TREATMENT OF WHICH SYSTEMS ANALYSIS IS USEFUL. THESE DO NOT INCLUDE THE MORE IMPORTANT AND BASIC ISSUES FACED BY DEVELOPMENT ADMINISTRATION.

MORE DIFFICULT THAN THE QUESTION OF TYPES OF PROBLEMS IN RESPECT TO WHICH SYSTEMS ANALYSIS IS A USEFUL METHOD ARE THE META-ANALYSIS PROBLEMS OF REQUISITES OF (A) FEASIBILITY OF SYSTEMS ANALYSIS AND REQUIREMENTS OF (B) SYSTEMS ANALYSIS EFFECTIVENESS AND (C) SYSTEMS ANALYSIS EFFICIENCY. MANY OF THESE REQUISITES AND REQUIREMENTS ARE NOT MET IN MOST DEVELOPMENT COUNTRIES, REDUCING FURTHER THE SIGNIFICANCE OF SYSTEMS ANALYSIS AS A PROBLEM-TREATMENT APPROACH -- UNLESS ACCOMPANIED BY, AND PART OF, BROADER SYSTEMIC CHANGES.

WHAT IS NEEDED, THEREFORE, BOTH IN ORDER TO GET SIGNIFICANT BENEFITS FROM SYSTEMS ANALYSIS AND -- MORE IMPORTANT -- BETTER TO TREAT THE BASIC AND CRITICAL PROBLEMS OF DEVELOPMENT ADMINISTRATION, IS A BROAD APPROACH TO THE IMPROVEMENT OF THE PUBLIC POLICYMAKING SYSTEM OF DEVELOPMENT COUNTRIES. IN SUCH AN APPROACH, SYSTEMS ANALYSIS IS ONLY ONE -- ALTHOUGH QUITE AN IMPORTANT -- COMPONENT.

### INTRODUCTION

Evaluation of the potential uses of systems analysis for development administration requires, logically, three main steps in respect to systems analysis and three main steps on the meta-systems-analysis level: In respect to systems analysis as an approach and set of tools, we must (a) examine the domain of actual and potential applicability of systems analysis; (b) clarify the main problems faced by development administration; and (c) identify the areas of overlap between a and b, that is, the extent of problems faced by development administration which can, in principle, be effectively dealt with by systems analysis. This is not an easy task, because the potentials of systems analysis in respect to social issues are not yet clear -- most of the efforts of applying systems analysis to social issues being just in their beginnings in the United States. But even more difficult is the more important task of evaluating the potential uses of systems analysis for development administration on the meta-level, where we have to apply systems analysis to the uses of systems analysis. Here the main questions -- given that systems analysis is in principle an effective method for dealing with significant problems of development administration -- are as follows: (a) what are the requisites of effectively using systems analysis? (b) assuming these requisites can be met, what are the costs of doing so? and (c) considering all basic needs of development administration on one hand and ways for trying to meet them other than systems analysis on the other hand, in how far is systems analysis a preferable use of scarce problem-solving resources? In other words: when and in how far is systems analysis not only an effective, but also an efficient mode for dealing with development problems?

Clearly, working out to their conclusions these six steps involved in systematic analysis of the problems of systems analysis for development administration is presently impossible. This is the case for a variety of reasons, such as: the flux in the state

of the art of systems analysis itself and uncertainty regarding its usefulness in respect to social issues; extreme scarcity of any reliable knowledge in respect to many of the requisites of systems analysis, especially in regard to political structures and "problem-solving culture"; and the large variation in conditions and resources between various so-called "development countries," making any generalizations of doubtful validity. But some first explanatory steps in the needed direction can be made, so as to sharpen main questions, identify critical variables and provide some tentative guides both for basic research and for improvement-directed action.

In this paper an effort is made to move in these directions, with special attention to the meta-analysis level. I am doing so not only because I regard that level as most important and more neglected in respect to the applications of systems analysis to development administration, but also because attention to the meta-analysis level in respect to development administration hopefully may provide significant side benefits in sharpening our understanding also in respect to the problems of applying systems analysis to social (including urban) problems in so-called highly developed societies, such as the United States.

### APPLICABILITY OF SYSTEMS ANALYSIS TO DEVELOPMENT PROBLEMS

Systems analysis is often presented in literature in terms of methods, techniques and tools.<sup>1</sup> This is natural because it is the tools and techniques which are tangible, explicated and easily communicable. But what is much more important is systems analysis as an approach, an orientation and even -- to use an apt phrase by Sir Geoffrey Vickers<sup>2</sup> -- a "frame of appreciation."

Reduced to its essentials, systems analysis is an effort to apply structured rationality to problems of choice. In particular, systems analysis in its pure form, involves three main elements:

- a. Looking at problems and alternatives in a broad way, which tries to take account of many of the relevant variables and of the probable results -- that is, taking a "systems" view.<sup>3</sup>

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<sup>1</sup> The best recent presentations of systems analysis are: E.S. Quade and W.I. Boucher, eds., Systems Analysis and Policy Planning: Application in Defense (N.Y.: American Elsevier 1968); C. West Churchman, The Systems Approach (New York: Delacorte Press, 1968); and Van Court Hare, Jr., Systems Analysis: A Diagnostic Approach (N.Y.: Harcourt, Bruce & World, Inc., 1967).

Some of the problems of applying systems analysis to broad social issues are discussed in: C. West Churchman, Challenge to Reason (New York: McGraw-Hill, 1968); and Robert Boguslaw, The New Utopians: A Study of System Design and Social Change (Englewood Cliffs, N.J.: Prentice-Hall, 1965).

<sup>2</sup> See Sir Geoffrey Vickers, The Art of Judgment (N.Y.: Basic Books, 1965), Chapter 4.

In contrast to United States applied decision theory, including most of systems analysis, which approaches problem solution by decomposition and treatment of different decision components (such as goals, alternatives and predictions), Sir Geoffrey Vickers emphasizes the need for a holistic Gestalt view of problems. See also his recent collection Value Systems and Social Process (N.Y.: Basic Books 1968).

<sup>3</sup> This is the meeting point of "systems analysis" and "general systems theory." Both share a desire to look at phenomena in terms of broad interrelated sets, called "systems." Otherwise, despite the similarities in names, there is amazingly little common ground between systems analysis and general systems theory, though there is much potential scope for mutual stimulation and perhaps even some integration.

- b. Searching for an "optimal," or at least clearly preferable, solution among available alternatives, without being limited to incremental changes.
- c. Explicit and rational identification of the preferable alternative (or alternatives) through comparison of expected results in terms of operational goals; this is done with the help of a large set of technicians, ranging from mathematical models to human gaming and from sensitivity testing to canvassing of experts' opinions.

Taking a very broad and favorable view of systems analysis, so as to include many of the elements of "policy analysis,"<sup>4</sup> systems analysis has nevertheless a domain of useful applicability limited by the following characteristics:

- a. Goals must be sufficiently concrete to serve as operational criteria for identifying and, on some scale, measuring probable results of the different alternatives.
- b. Most of the results of the main alternatives must be predictable, at least in probabilistic form. Therefore, some "models" to work out the probable results of alternative decisions are required.
- c. Some alternatives which will prove to be "good enough" by some acceptance level standards must be available, or easily synthesizable from available alternatives.

Insofar as these characteristics are correct -- and in respect to the present state of the art of systems analysis they are, if anything, too lenient, by not including the requirement of quantifiability -- then, at least the following types of problems are excluded from effective treatment through systems analysis:

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General systems theory is well presented in the following recent books: Ludwig von Bertalanffy, General Systems Theory: Foundations, Development, Application (New York: George Braziller, 1968); F. Kenneth Berrien, General and Social Systems (New Brunswick, N.J.: Rutgers University Press, 1968); and Walter Buckley, ed., Modern Systems Research for the Behavioral Scientist (Chicago: Aldine, 1968).

<sup>4</sup> See Yehezkel Dror, "Policy Analysis: A New Professional Role in Government Service", Public Administration Review, Vol. XXVII, No. 3, (September 1967) pp. 197-203.

- a. Value judgment, including determination of value mixes to be aimed at, and contextual goals not to be impaired; and basic value judgments in respect to policy strategies on acceptable levels of risk-taking and attitude to time.
- b. Predominantly political problems, where the main desired results are consensus, "nation building," coalition maintenance and political power recruitment.<sup>5</sup>
- c. Disequilibrium policies, where the main aim is to shock a system into changing, rather than carefully controlling the directions of change.<sup>6</sup>
- d. Radical innovation policies, where the main elements of progress are invention of new ideas, social experimentation and learning feedback -- rather than comparison of expectations in respect to available or easily discoverable alternatives.
- e. Implementation issues, where a "technically" preferable decision is easy to identify, but its implementation requires change in institutions and new institution building.

Application of my short, positive and negative, characterization of the domain of usefulness of systems analysis to some main development administration problems provides some indication of the potential role of systems analysis in development administration. (See table -- Potential Uses of Systems Analysis in Development Administration, page 7.)

The main conclusion emerging from this application can fairly be summarized as follows: Systems analysis can be of significant help in dealing with many important low-level and medium-level problems. But nearly all top-level problems are beyond systems

<sup>5</sup> For a very interesting exploration of the interfaces between analytical modes of decisionmaking and "political" modes of decision-making, see Charles L. Schultze, The Politics and Economics of Public Spending (Washington, D.C., The Brookings Institution, 1968).

<sup>6</sup> The systems analysis approach and the comprehensive planning attitude are closely related in their interest in systems views and systems changes. When non-balanced growth is preferable, much of the appeal of both systems analysis and comprehensive planning is therefore lost. See Albert Hirschman, The Strategy of Economic Development (New Haven: Yale University Press, 1958) and my article "Comprehensive Planning: Common Fallacies Versus Preferred Features," in F. van Schagen, ed. Essays in Honour of Professor Joe P. Thijssse (The Hague: Mouton, 1967), pp. 85-99.

Essential Uses of Systems Analysis in Development Administration

Problem Area	Systems Analysis Quite Useless	Systems Analysis Somewhat Helpful (if requisites are met)		Systems Analysis Very Helpful (if requisites are met)
		None	None	
Agriculture	Land reform; resources commitment; internal political implications; degrees of innovation; degree of diversification; main development direction; foreign implications; attitudes to north.	R&D: Land reallocation, training, monitoring system.	Land use and product mix; irrigation, distribution and marketing system.	
Culture	"National identity"; encouragement of indigenous art and creative crafts; attitudes to rationality; anthropological, social & political values; language; problems of polycentrism; clash between traditional and modernizing values; and more.	Some aspects of written language development; some aspects of mass communication.	None	
Defense	Main goals: resources commitment; basic internal political implications; strategies & basic weapons choices; internal problems of army policies; external aid and procurement opportunities.	Escalation of protection needs; force composition; defense R&D; defense production.	Low-level weapon mix; logistics & some manpower problems.	
Education and Research	Main directions of effort (code training, mass education, technological education, etc.); political & ideological implications; resources allocation; basic content; teacher development; preparation to leave state; relations with basic economy, social and foreign policies.	Learning method and devices; "Brains Drain"; educational network; interconnections; location of facilities; teaching manpower utilization.	Facility planning.	
Foreign Policies	Main goals; resources commitment; internal political implications; basic strategies & involvement.	Some predictions of exogenous variables; some country investment benefit-cost estimation.	Some aspects of external presentation network (e.g., location, communication, logistics)	
Health	Resources commitment; main directions of effort; basic structure (public insurance, etc.); problems of "health culture"; health habits & healing traditions; recruitment & handling of foreign aid; concepts of "health person"; political & professional aspects (e.g., feasibility of using "nonprofessional" in treatment).	Some aspects of treatment systems; some aspects of training of professionals; medical R&D.	Facility programming.	
Industrialization	Main directions of effort; risk policy; resource commitment; basic strategy (public sector, encouragement of private enterprise, etc.); external aid recruitment and handling; attitudes to work.	Project choice, R&D policy; monitoring system.	Project programming.	
Internal Politics	"Action building" strategies; coalition building & unification; leader recruitment & development; political culture; elite transformation; principles to know; political ideologies & values; consensus on rules of succession; conflict management; transfers of power to modernizing agents; handling of polycentric groups, & more.	Communication and political socialization and networks; some problems of internal security	None	
Population	Basic approach; ideological, cultural & political feasibility; resources commitment; external implications and pressures.	Alternative methods; information and propaganda system; incentive system; monitoring system.	Distribution network	

analysis. Also, most of the sub-components of top-level problems cannot be dealt with by systems analysis until some basic strategy issues are determined by other methods and until much creative invention of new alternatives takes place. Furthermore, even in respect to many medium-level and some low-level problems, resolution of strategy problems and alternative invention are often a requisite before systems analysis can be effectively used.

Here we have one of the striking differences between policy-making needs in developed countries and in development countries. In development countries basic features of society, central trends in social strategies and fundamental system characteristics are themselves main targets for change-oriented policies and -- whether more or less influenced by our explicit desires and actions -- are expected to change in quite unpredicted directions. Therefore, focusing better decisionmaking on sub-levels where systems analysis is easily applicable often makes little sense and in many cases may be clearly counterproductive -- by focusing very scarce decision-improving resources at wrong issues and creating political-social investments which it will be impossible to "write-off" when their underlying assumptions will be exposed as incorrect or outdated. What is really needed first are ways for better policymaking in respect to basic social issues and under conditions of extreme uncertainty and absence of good alternatives.<sup>7</sup>

This tentative conclusion concerning the limited effectiveness of systems analysis in respect to significant parts of the tasks of development administration leads us directly on to the meta-analysis level.

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<sup>7</sup> These conditions apply not only to underdeveloped countries, but to "underdeveloped" segments within highly developed societies, including some main components of the cluster often called "urban problems." Therefore, many of the tentative conclusions of this paper may apply, in principle, to important social problem areas in, for instance, the United States.

On the trend in highly developed societies more to engage in conscious self direction see the pioneering work by Amitai Etzioni, The Active Society: A Theory of Societal and Political Processes (N.Y.: The Free Press, 1968).

FEASIBILITY AND EFFICIENCY OF SYSTEMS  
ANALYSIS UNDER DEVELOPMENT CONDITIONS

Some requisites of systems analysis, without which good systems analysis is not feasible, are quite obvious and tangible, while others are more complex. Proceeding from the most simple to the more complex, at least eight main requisites can be identified, some of which have already been mentioned:

1. Availability of professionals able and willing to undertake high-quality systems analysis.
2. Availability of data on which analysis can be based.
3. Availability of valid theories, which permit at least some reliable predictions on probable results of different alternatives.
4. Availability or easy discoverability of alternatives which promise "good" results.
5. Sufficient political cohesion to reach agreement on some operational goals.
6. Existence of basic agreed-upon contextual values and problem solving strategies (e.g., on attitudes to risk and time).
7. Existence of sufficient power support for analysis to get access to required information.
8. Existence of political-organizational institutions stable enough to maintain analysis activities.

Much more diffuse are some of the requirements of systems analysis effectiveness, in the sense of having any probability of impact on policies, and of efficiency, in the sense that allocation of resources to systems analysis is justified in terms of probable impact of systems analysis on real policies, in comparison with other modes of improving policies using the same or competitive resources. At least six such main requirements can be identified:

1. Absence of acute crises, which monopolize attention and prevent long-term spans of attention.
2. Existence of significant choices, in the sense (a) that choices are not dictated by external power centers (e.g., foreign aid limited to specific uses) and (b) that different alternatives are not clearly equifinal, that is, lead to the same -- or equivalent -- results. (E.g., when the goal is to disilibrate, never mind in what way.)

3. Sufficient strong implementation capacity to assure influences of decisions on action.
4. "Nation-building" sufficiently advanced not to require dominant, or even exclusive, attention.
5. Readiness to innovate, or at least openness to consider new alternatives.
6. Acceptance of "rationality" as a useful approach to problems, as contrasted, for instance, with rigid doctrine, *führer* ideology or belief in astrology.

Admittedly, my categorization is too sharp: In reality, requisites and requirements are often satisfied in various degrees in respect to different problem areas and various political-organizational contexts. Therefore, in respect to any concrete country, the questions are not if to use systems analysis, but rather, in how far and where to use it and what efforts to make in order to better meet the requisites and to satisfy the requirements.

Recognizing these limits of my analysis, I tend nevertheless to the impression, that not only are many requisites of systems analysis largely unsatisfied in many development countries,<sup>8</sup> but also the conditions in many of the development countries often make systems analysis a quite ineffective and inefficient mode for decisionmaking. This does not imply that systems analysis is not one of the useful approaches to be utilized by development administration, but that other things should often come first. In particular, "nation building" and pro-innovation and rationality-oriented political and organizational institutions are essential antecedents of useful (feasible, effective, and efficient) analysis.

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<sup>8</sup> Again, many parallels exist between development countries and developed countries. For instance, one of the striking omissions in the efforts to introduce PPBS and analysis in the federal agencies of the United States is the very low level of efforts to train systems analysis professionals, and thus to meet a critical requisite. To take a more fundamental issue: In respect to some (but not all) components of the "urban problems" or "student problems" clusters, some of the basic requisites and requirements of effective and efficient systems analysis may be underdeveloped -- such as valid theories, agreement on contextual value and policy strategy, and even acceptance of rationality.

FROM SYSTEMS ANALYSIS TO POLICYMAKING IMPROVEMENT

Many of the conditions for systems analysis feasibility, effectiveness and efficiency involve basic features of society, partly well beyond conscious human control, and partly depending on extra-rational modes of social direction -- such as charismatic leadership and prophetic inspiration. But a lot remains to be done through rational approaches, in the broad sense of the term which includes also recognition and encouragement of essential extra-rational elements of better policymaking, such as creativity and propensities to innovate.<sup>9</sup>

Looking at the central issues facing development countries and on their basic conditions, systems analysis emerges as one of the methods for dealing with only some of the development problems and not the more fundamental ones. Insofar as rationality and knowledge can contribute to development administration, much more seems to be needed than introduction of systems analysis: The whole policymaking system must be improved and, insofar as feasible, redesigned, to gain the capacities of applying rationality (including rationality-supported extrarationality) and knowledge to the main problems and to gain the intent to do so. (A parallel conclusion, though in less intense form, can be reached by proceeding from systems analysis to the organizational and political conditions of its utilization and to the problem of thresholds for achieving any significant impact on policymaking. Overall changes in the public policymaking system emerge as nearly always desirable and often essential for achieving better policies. Individual methods such as systems analysis by themselves can, at best, achieve only limited impacts: to avoid neutralizing counter-adjustments they must be accompanied by

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<sup>9</sup> See Yehezkel Dror, Public Policymaking Reexamined (San Francisco: Chandler, 1968) Part IV, for an extended examination of the roles of rationality and extrarationality in preferable policymaking.

broader systems changes and should, preferably, be part of a more comprehensive policymaking-improvement effort.)<sup>10</sup>

To illustrate, let me mention seven main improvements in the public policymaking system (other than introduction of systems analysis) which seem essential for application of rationality and knowledge in development administration. My tentative thesis is, that without realization of at least some such improvements, systems analysis may be of little use, and sometimes even quite counter-productive. Within a set of such improvements, systems analysis has a good probability for synergetically interacting with other improvement components, making an important -- though limited -- contribution to better policymaking:<sup>11</sup>

1. The operations of the highest political decision-making organs, such as the president, prime minister and cabinet, should be improved through (a) restructure of information input; (b) provision of staff aids for analysis; (c) monitoring of implementation results; and (d) changes in deliberation preparations (e.g., background papers and briefings).

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<sup>10</sup> Two very important articles with strong insights into the necessity of moving from a narrow PPB systems analysis syndrome to broader improvements, are Bertram M. Gross, "The New Systems Budgeting," Public Administration Review, Vol. XXIX, No. 2 (March-April, 1969), pp. 113-137, and Aaron Wildavsky, "Rescuing Policy Analysis from PPBS," Public Administration Review, Vol. XXIX, No. 2 (March-April, 1969), pp. 189-202.

See also my papers "Some Normative Implications of a Systems View of Policymaking," Proceedings of the 14th Annual Meeting, The Society for General Systems Research (1969, in print). (Earlier version RAND paper P-3991-1, February 1969) and "PPB and the Public Policymaking System -- Some Reflection on the Papers by Bertram M. Gross and Allen Schick," Public Administration Review, Vol. XXIX, No. 2 (March-April, 1969), pp. 152-154. (Earlier version RAND paper P-3999, December 1968.)

<sup>11</sup> The systematic theoretic basis for these recommendations is presented in my book Public Policymaking Reexamined, op. cit. The illustrations are taken from my paper "Accelerated Development and Policymaking Improvement," to be published in Civilizations. (Earlier version RAND paper P-4021, March 1969).

2. The macro-structure of the government should be subjected to reconsideration, including the number of ministries, the composition of the cabinet (e.g., ministers without portfolios), the relations between different levels of government, the role of quasi-government agencies, etc. This reconsideration should look at the picture as a whole and from above, focusing on basic features and not the details of sub-structure and procedure.
3. The higher civil service patterns should be reconsidered, with special attention to their policy functions. For instance: easy interchange between governmental, other public, quasi-public and perhaps private organizations and compulsory rotation in the government seem essential for preserving imagination and readiness to innovate. Fixed-term appointments and freedom to engage in various forms of political activity may well meet better the needs of some development countries than the British-type career civil service patterns. Academic training in social science and analytic methods may be preferable for the policy level civil servants, requiring radical changes in the management and administrative technique orientations of many of the training centers in and for development countries.
4. Social science and analysis professionals should serve as central staff officers for policy issues, in addition to and instead of the traditional civil servants, budget officials and economic feasibility examiners. A special profession of "development policy analysts" may be required for heading staff analysis units working on the higher policy level in the main ministries, on the cabinet level and for the legislature (if the latter has autonomous policymaking functions).
5. Policy-oriented research and study in the involved country should be encouraged by establishment of special interdisciplinary policy analysis units and by motivating local universities to focus on national policy-relevant research. The policy analysis units should enjoy considerable freedom in their studies, but maintain confidential relations with the government.<sup>12</sup>
6. Innovative action must be initiated to improve the qualifications of the politicians. This is clearly possible within many given basic values and ideologies, for instance by encouraging politicians after their election and/or appointment to engage in studies, paid for by the government or by external aid. Design of

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<sup>12</sup> For an illustration, see my detailed suggestions in "An Israeli Institute for Policy Analysis: A Proposal," Civilizations, Vol. XVII, No. 4 (1967), pp. 435-441.

suitable courses for politicians from development countries is one of the urgent needs.<sup>13</sup>

7. New orientations and modes for considering policy-alternatives under conditions of accelerated development must be designed, tried out and conveyed to the main policymakers -- politicians, civil servants and professionals alike. These orientations and modes should be adjusted to the high degrees of uncertainties involved in efforts to direct accelerated development -- e.g., through contingency planning, sequential decisionmaking, self-insurance, sensitivity testing, social experimentation, etc.

This is a rather general list, application of which to the concrete conditions of a particular country requires delicate field-work and careful design of preferable policymaking-system models, fitting the specific circumstances and needs, with much attention to limits of feasibility, including political feasibility. (To illustrate such an effort, I am putting into the Appendix a set of proposals for the improvement of public policymaking in Israel, based both on academic study at the Hebrew University of Jerusalem and work as a consultant to various units of the Israeli government.)<sup>14</sup> But hopefully the list does provide some operational context to my overall conclusion on the limits of systems analysis as a lonely rationality-based method in development administration and the necessity instead, to proceed on a wide band of policymaking-improvements, in which systems analysis is only one, though an important, component.

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<sup>13</sup> For a design of such a course, see Yehezkel Dror, "The Improvement of Leadership in Developing Countries," Civilizations, Vol. XVII, No. 1/2 (1967), pp. 72-82.

<sup>14</sup> See Appendix, pp. 15, ff.

APPENDIX

The following set of proposals (in no order of priority) has been developed by the author at the Hebrew University of Jerusalem and in his capacity as consultant to various government units in Israel. It is presented here on the personal responsibility of the author and does not necessarily reflect the opinions of any of the official bodies to which he served as a consultant. The list has been prepared as a partial guide for concrete action, with different items being advanced when feasible. The main conclusion from experience with the efforts to realize single components of this set in Israel, is, in the opinion of the author, that simultaneous improvements in a number of policymaking components are essential for achieving a viable and significant impact. The version presented here excludes some details which refer concretely to more specific Israeli problems and conditions.

1. Improvement of Crisis Management

- a) Past experience with crisis management should be studied, as a basis for improvements. A new crisis management system should be designed, with special attention to the highest political levels and to the introduction of longer-range political considerations into crisis decisionmaking.
- b) Crisis exercises and crisis games should be conducted on the Cabinet and sub-Cabinet level -- to run in the crisis management system, to aid in contingency planning, and to sensitize top policymakers to additional considerations and alternatives.

2. Improvement of Current Decisionmaking

- a) Policy analysis and policy planning staffs should be established in the Prime Minister's Office, to deal with main super-ministerial issues.
- b) One-person-centered high-level decision situations should be improved, especially on the level of the senior Cabinet members. This requires redesign of the personal decision-environment of the senior policymakers, trying to apply modern ideas of military command and control systems to civil-political issues, with full allowance for the personal styles of the senior policymakers.

c) A planning-programming-budgeting-system adjusted to the country's conditions should be introduced throughout the government, and planning and policy-analysis units established in all ministries. Those units should constitute a small interdisciplinary staff, bringing to bear on the ministry's activities analytical methods and substantive knowledge -- especially economics, social sciences and relevant natural sciences.

d) Establishment of policy research units should be encouraged in all components of the social guidance cluster (e.g., parties, Histadrut, main municipalities).

e) The Knesset Committees should appoint professional staff and increasingly utilize expert testimony and opinions.<sup>15</sup>

### 3. Improvement of Medium-Time Range and Long-Time Range Decisions

a) An "Institute for Policy Analysis" should be established, at which about twenty-five interdisciplinary scientists will engage in policy-oriented study of main medium- and long-time problems of the state. This institute should enjoy both independence in its professional work and access to government information and senior policymakers. Senior policy practitioners and academicians should participate in the work of that Institute.

b) The "Economic Planning Authority" should be transformed into a "National Planning Authority," dealing in an integrated way with economic, physical and social planning. The professional composition of its staff should be suitably broadened.

<sup>15</sup> For a detailed illustration see Yehezkel Dror, "Proposed Policymaking Scheme for the Knesset Committee for the Examination of the Structure of Elementary and Post-Elementary Education in Israel - An Illustration of a Policy Analysis Memorandum," Socio-Economic Planning Sciences, Vol. 2, 1969 (in print). (Earlier version RAND paper P-3951, October 1968.)

c) Foreign policy and strategic planning (beyond the highly developed military level, which is not dealt with in this set of proposals) should be strengthened through establishment of a National Policy Planning Board, with a staff including both experienced practitioners and academicians.

d) The National Planning Authority and the National Policy Planning Board should operate within a reconstructed Prime Minister's Office and/or Cabinet Secretariat, and maintain close contact with the ministerial planning and analysis staffs. Its more basic and long-range work is to be based in part on studies prepared by the Institute for Policy Analysis.

e) Among the tasks of the National Planning Authority and the National Policy Planning Board is preparation of alternative operational goals for the country for the year 1975. Among the tasks of the Institute for Policy Analysis is preparation of alternative future images of Israel for the year 2000, with the help of various teams and panels of experts, politicians, senior officials and public persons.

f) All components of the social guidance cluster and other civic and private groups should be encouraged to consider the long-range problems of Israel.

#### 4. Improvements of Research and Information

a) The collection of information, in particular in respect to social issues, should be significantly improved. For these purposes, a social accounting system and current opinion study should be introduced.

b) Research and publication dealing with the problem of the country should be encouraged and supported. In particular, incentives should be provided to orient academic research towards national policy problems.

5. Improvement of Policymaking Personnel

a) A new policy for developing the senior civil service should be designed, including the following elements: intense courses in policy science and policy relevant areas, combined with personality training (e.g., T-group method); rotation within the government and between the government service and the public and private sectors; accelerated advancement for innovative and capable young entrees, together with early retirement for some others; short-term appointments to senior positions of university academicians, businessmen, etc.; and restructuring of recruitment for senior positions.

b) Elected politicians should be encouraged to study and develop, through granting of "sabbaticals" paid for by the public, arrangement of special courses for politicians, and study tours.

c) Highly qualified personnel for policymaking positions should be provided by establishing graduate teaching programs in policy sciences at the universities, directing parts of social science teaching toward policy advisory positions, and granting government fellowships for advanced graduate and post-graduate studies in these areas.

d) A "National Policy College" should be established, to take over in a more comprehensive and effective way the functions of the former National Defense College. In particular, it should provide intense six-week to three-month seminars for senior officials, defense force officers, politicians, academicians, newspaper commentators and similar policy-involved persons, on national problems -- emphasizing an integrated and comprehensive analysis of defense, foreign, economic and social problems.

e) Special learning opportunities should be provided to mass-media professionals -- such as correspondents and commentators -- to get them acquainted with policy sciences and encourage better presentation of policy issues to the public.

f) Intense efforts should be devoted to teacher-training and teacher-retraining to prepare them for more problem-oriented and analysis-based teaching of all subjects in all grades.

6. Improvement of the Role of the Public in Policymaking

a) The teaching of civics, history and social sciences in the schools should be radically reformed, so as to train pupils in information search, analysis and position-formulation. Special attention should be paid to study of current public issues in a way advancing the autonomous judgment-capacities of the students.

b) Discussion of policy issues in the mass media of communication should be changed, to provide the audience with deeper insights into the problems and better understanding of the involved values, facts, interests and alternatives.

c) Participation in decisionmaking should be encouraged, mainly on the community level and in work teams (on the lines of "overlapping management" rather than formal and distant representation).